**MINERAL POLICY SECTOR**
**INTERNAL REPORT**
**MRI 89/2**

# CANADIAN IRON ORE INDUSTRY STATISTICS 1988

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Énergie, Mines et Ressources Canada
L'hon. Jake Epp, Ministre

Canada

THE ENERGY OF OUR RESOURCES

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## PREFACE

This report is a continuation of the Canadian Iron Ore Industry Statistics series that was developed for the Mineral Information Bulletin published from 1955 through 1970. The statistical data, when used in conjuction with the Iron Ore chapter of the Canadian Minerals Yearbook, presents a comprehensive review of the iron ore industry for 1988.

The data used in the compilation of the statistical tables were supplied to Mineral Policy Sector by individual firms within the Canadian iron ore industry. Their cooperation and prompt responses to our requests are greatly appreciated.

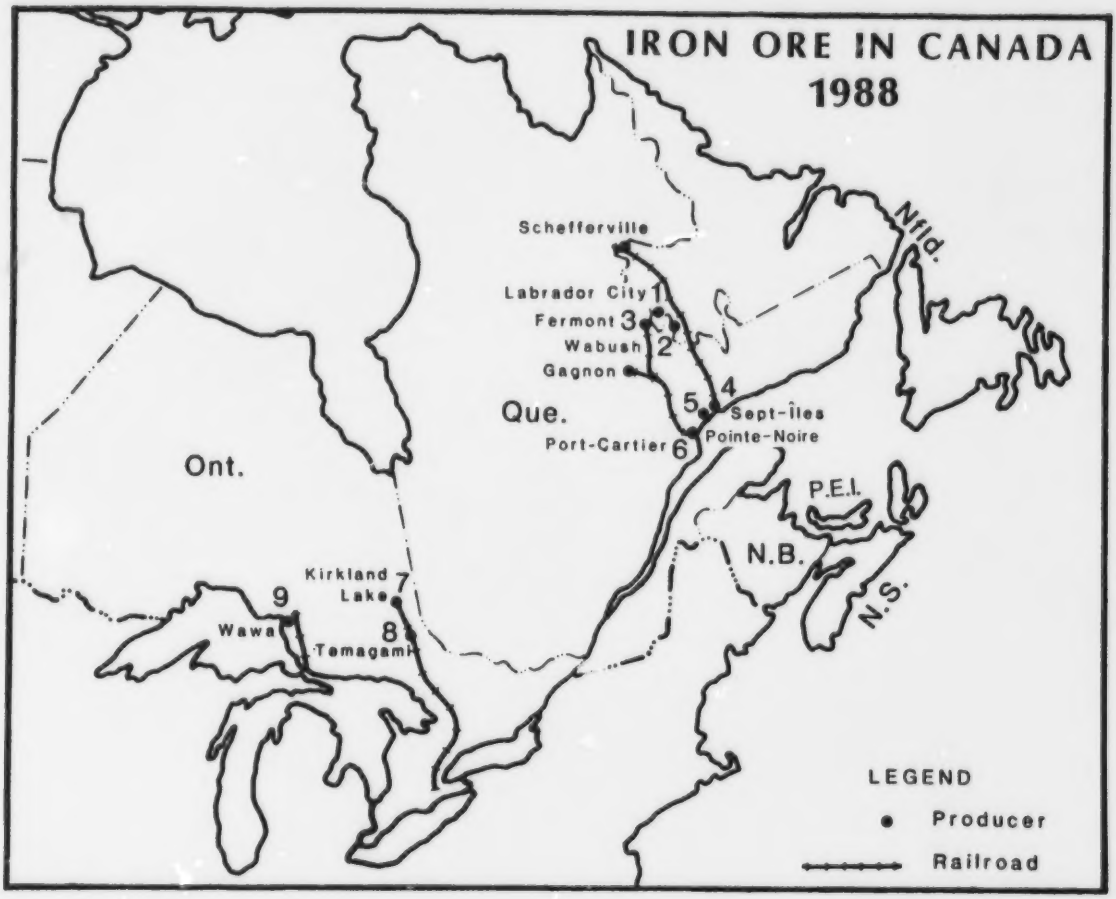
## TABLES

## 1988 STATISTICS


| | | Page |
|---|---|---|
| Table 1- | Canada, Iron Ore Producers, 1987 and 1988..... | 2 |
| Table 2- | Crude Iron Ore Mined in Canada, by Variety and Grade, 1988..... | 3 |
| Table 3- | Crude Iron Ore Mined in Canada, by Mining Method, 1988..... | 4 |
| Table 4- | Disposition of Crude Iron Ore Mined in Canada, 1988..... | 5 |
| Table 5- | Usable Iron Ore Produced in Canada, by Type of Product, 1988..... | 6 |
| Table 6- | Waste/Ore Concentration Ratios at Canadian Iron Ore Mines, 1988..... | 7 |
| Table 7- | Usable Iron Ore Shipped by Canadian Producers, by Type of Product, 1988..... | 8 |
| Table 8- | Usable Iron Ore Shipped by Canadian Producers, by Destination, 1988..... | 9 |
| Table 9- | Stocks of Usable Iron Ore at Mines and Shipping Ports in Canada, 1987 and 1988..... | 10 |
| Table 10- | Analysis of Canadian Iron Ore Shipments in 1988. | 11 |


## ILLUSTRATION


Iron Ore in Canada, 1988..... 1




PRODUCERS
(numbers refer to numbers on map above)

1. Iron Ore Company of Canada,
Carol Division
(mine/concentrator/pellet plant)

2. Wabush Mines
(mine/concentrator)

3. Quebec Cartier Mining Company
(mine/concentrator)

4. Iron Ore Company of Canada (port)

5. Wabush Mines
(pellet plant/port)

6. Quebec Cartier Mining Company
(pellet plant/port)

7. Dofasco Inc.,
Adams mine
(mine/concentrator/pellet plant)

8. Dofasco Inc.,
Sherman mine
(mine/concentrator/pellet plant)

9. Algoma Ore division of The Algoma Steel Corporation, Limited
(mine/concentrator/sinter plant)

TABLE 1: CANADA, IRON ORE PRODUCERS, 1987 AND 1988

| Company and Property Location | Participating Companies | Material Mined and/or Treated 1988 | Product Shipped 1988 | Shipments 1987 | Shipments 1988 |
|---|---|---|---|---|---|
| | | (% Fe natural) | (% Fe dry/wet) | (000 tonnes natural) | |
| Adams Mine; Boston Twp., near Kirkland Lake, Ontario. | Dofasco Inc.; managed by Cliffs of Canada Limited, a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company. | Magnetite from open-pit mine 19 | Pellets 61.42/60.98 | 1 036 | 1 017 |
| Algoma Ore Division of The Algoma Steel Corporation, Limited; mine and sinter plant near Wawa, Ontario. | Wholly-owned. | Siderite from underground mine 34 | Sinter 48.39/48.39 | 1 118 | 1 066 |
| Iron Ore Company of Canada; mines, concentrator and pellet plant at Carol Lake, Labrador; direct shipping ore from stockpile at Sept-Iles, Quebec. | Labrador Mining and Exploration Company Limited 10.47%; M.A. Hanna Company (managing agent) 26.77%; Bethlehem Steel Corporation 32.84%; Dofasco Inc. 6.07%; National Steel Corporation 18.99%; Wheeling-Pittsburg Steel Corporation 4.86%. | Hematite from open-pit 38.9 | Direct shipping 59.9/55.9<br>Concentrates 65.8/64.0<br>Pellets 65.0/64.0 | 1 173<br>2 958<br>9 136 | 788<br>4 127<br>9 853 |
| Quebec Cartier Mining Company; includes mine and concentrator at Mount Wright near Fermont, Quebec; pellet plant at Port Cartier, Quebec. | USX Corporation. | Hematite from open-pit 32.1 | Concentrates 66.02/64.03<br>Pellets 65.26/64.30 | 8 156<br>8 198 | 8 506<br>8 331 |
| Sherman Mine; near Temagami, Ontario. | Dofasco Inc. 90%; Tetapaga Mining Company Limited (wholly-owned subsidiary of The Cleveland-Cliffs Iron Company) 10%. The operation and management of the mine is by Cliffs of Canada Limited, also a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company. | Magnetite from open-pit mine 25 | Pellets 60.79/60.31 | 1 090 | 865 |
| Wabush Mines; Scully Mine includes mine and concentrator at Wabush, Labrador; Pointe Noire Division includes pelletizing plant at Pointe Noire, Quebec. | Stelco Inc. 25.6%; Dofasco Inc. 16.4%; The LTV Corporation 15.6%; Inland Steel Company 10.2%; The Interlake Corporation 10.2%; Wheeling-Pittsburg Steel Corporation 10.2%; Finsider of Italy 6. 6% and Pickands Mather & Co. (managing agent) 5.2%. | Hematite from open-pit mine 35 | Pellets 65.33/63.88 | 5 478 | 6 035 |

TABLE 2: CRUDE IRON ORE MINED IN CANADA, BY VARIETY AND GRADE, 1988

| | Hematite | | Magnetite | | Siderite | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Newfoundland | | | | | | |
| Iron Ore Company of Canada (Carol Division) | 35 444 947 | 38.90 | | | | |
| Wabush Mines | 19 638 891 | 37.37 | | | | |
| Quebec | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | 41 255 461 | 32.10 | | | | |
| Ontario | | | | | | |
| Adams Mine | | | 3 358 537 | 19.20 | | |
| Algoma Ore Division | | | | | 1 371 721 | 34.15 |
| Sherman Mine | | | 3 386 677 | 24.93 | | |
| Total | 96 339 299 | 35.68 | 6 745 214 | 22.08 | 1 371 721 | 34.15 |

TABLE 3: CRUDE IRON ORE MINED IN CANADA, BY MINING METHOD, 1988

| | Open Pit | | Underground | | Total | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| **Newfoundland** | | | | | | |
| Iron Ore Company of Canada (Carol Division) | 35 444 947 | 38.90 | | | 35 444 947 | 38.90 |
| Wabush Mines | 19 638 891 | 37.37 | | | 19 638 891 | 37.37 |
| **Quebec** | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | 43 337 625 | 32.10 | | | 43 337 625 | 32.10 |
| **Ontario** | | | | | | |
| Adams Mine | 3 358 537 | 19.20 | | | 3 358 537 | 19.20 |
| Algoma Ore Division | | | 1 371 721 | 34.15 | 1 371 721 | 34.15 |
| Sherman Mine | 3 386 677 | 24.93 | | | 3 386 677 | 24.93 |
| Total | 105 166 677 | 34.73 | 1 371 721 | 34.15 | 106 538 398 | 34.73 |

TABLE 4: DISPOSITION OF CRUDE IRON ORE MINED IN CANADA, 1988

| | For Direct Shipping | | To Concentration Plant | | Total | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Newfoundland | | | | | | |
| Iron Ore Company of Canada (Carol Division) | | | 35 444 947 | 38.90 | 35 444 947 | 38.90 |
| Wabush Mines | | | 19 888 193 | 37.37 | 19 888 193 | 37.37 |
| Quebec | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | | | 43 337 625 | 32.10 | 43 337 625 | 32.10 |
| Ontario | | | | | | |
| Adams Mine | | | 3 402 702 | 19.20 | 3 402 702 | 19.20 |
| Algoma Ore Division | | | 1 351 707 | 34.15 | 1 351 707 | 34.15 |
| Sherman Mine | | | 3 353 152 | 24.93 | 3 353 152 | 24.93 |
| Total | | | 106 778 326 | 34.73 | 106 778 326 | 34.73 |

TABLE 5: USABLE IRON ORE PRODUCED IN CANADA, BY TYPE OF PRODUCT, 1988

| | Direct Shipping | | Concentrate | | Agglomerate | | Total | |
|---|---|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Newfoundland | | | | | | | | |
| Iron Ore Company of Canada (Carol Division) | | | 4 715 158 | 64.40 | 9 828 362 | 64.01 | 14 543 520 | 64.14 |
| Wabush Mines | | | | | 6 035 256 | 63.88 | 6 035 256 | 63.88 |
| Quebec | | | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | | | 8 336 147 | 66.20 | 8 545 322 | 64.40 | 16 881 469 | 65.29 |
| Ontario | | | | | | | | |
| Adams Mine | | | | | 1 017 373 | 60.98 | 1 017 373 | 60.98 |
| Algoma Ore Division (1) | | | | | 1 066 167 | 48.79 | 1 066 167 | 48.79 |
| Sherman Mine | | | | | 864 790 | 60.31 | 864 790 | 60.31 |
| Total | | | 13 051 305 | 65.55 | 27 357 270 | 63.28 | 40 408 575 | 64.01 |

(1) Includes 133 510 tonnes of purchased iron oxides and 110 364 tonnes of lime.

TABLE 6: WASTE/ORE CONCENTRATION RATIOS AT CANADIAN IRON ORE MINES, 1988

| | Open-pit Waste | Underground Waste | Iron Ore Mined | Mill Feed | Usable Iron Ore Produced | Waste/Ore Ratio | Waste/Usable Ore Ratio | Concentration Ratio |
|---|---|---|---|---|---|---|---|---|
| | | | | | (tonnes) | | | |
| Newfoundland | | | | | | | | |
| Iron Ore Company of Canada (Carol Division) (1) | 9 464 000 | | 35 444 947 | 35 444 947 | 15 067 313 | 0.27 | 0.63 | 2.35 |
| Wabush Mines | 5 107 363 | | 16 325 385 | 22 189 583 | 6 080 994 | 0.31 | 0.84 | 3.65 |
| Quebec | | | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | 20 003 314 | | 41 255 461 | 43 337 625 | 16 689 218 | 0.48 | 1.20 | 2.60 |
| Ontario | | | | | | | | |
| Adams Mine | 1 840 786 | | 3 358 537 | 3 402 702 | 1 179 493 | 0.55 | 1.56 | 2.88 |
| Algoma Ore Division (2) | | 4 608 | 1 467 393 | 1 351 707 | 1 343 600 | 0.00 | 0.00 | 1.01 |
| Sherman Mine | 2 046 742 | | 3 794 198 | 3 353 152 | 1 030 287 | 0.54 | 1.99 | 3.25 |

(1) A factor of 2.6 tonnes equals one cubic metre was used.

(2) Usable iron ore produced and subsequent ratios include 133 510 tonnes of steel plant waste oxide and 110 364 tonnes of lime.

TABLE 7: USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY TYPE OF PRODUCT, 1988

| | Direct Shipping | | Concentrate | | Agglomerate | | Total | |
|---|---|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Newfoundland | | | | | | | | |
| Iron Ore Company of Canada (Carol Division) | | | 4 126 999 | 64.0 | 9 853 178 | 64.0 | 13 980 177 | 64.0 |
| Wabush Mines | | | | | 6 035 256 | 63.9 | 6 035 256 | 63.9 |
| Labrador-Quebec | | | | | | | | |
| Iron Ore Company of Canada (Sept-Îles Division) | 788 167 | 55.9 | | | | | 788 167 | 55.9 |
| Quebec | | | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | | | 8 506 144 | 64.0 | 8 330 907 | 64.3 | 16 837 051 | 64.1 |
| Ontario | | | | | | | | |
| Adams Mine | | | | | 1 016 504 | 61.0 | 1 016 504 | 61.0 |
| Algoma Ore Division | | | | | 1 066 167 | 48.4 | 1 066 167 | 48.4 |
| Sherman Mine | | | | | 864 790 | 60.3 | 864 790 | 60.3 |
| Others | | | 1 262 | .. | | | | |
| British Columbia | | | | | | | | |
| Others | | | 25 685 | .. | | | | |
| Total (1) | 788 167 | 55.9 | 12 660 090 | 64.0 | 27 166 802 | 63.2 | 40 588 112 | 63.3 |

(1) Average % Fe Nat calculated from available statistics.
.. Not available.

TABLE 8: USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY DESTINATION, 1988

| | Canada | | United States | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | All Rail | Other | Great Lakes | Other Ports | All Rail | EC | Japan | Other | Total |
| | | | | | (tonnes) | | | | |
| Newfoundland | | | | | | | | | |
| Iron Ore Company of Canada | | | | | | | | | |
| Carol Div. (conc.) | | | 87 061 | 6 698 | | 1 317 078 | 2 370 341 | 345 821 | 4 126 999 |
| Carol Div. (pellets) | | 1 719 281 | 654 162 | 4 442 862 | | 2 973 863 | | 63 010 | 9 853 178 |
| Wabush Mines (pellets) | | 3 137 610 | 1 682 775 | 319 022 | | 895 849 | | | 6 035 256 |
| Labrador-Quebec | | | | | | | | | |
| Iron Ore Company of Canada | | | | | | | | | |
| Sept-Îles Division | | | | | | | | | |
| (direct-Shipping) | | 158 128 | 121 963 | | | 508 076 | | | 788 167 |
| Quebec | | | | | | | | | |
| Quebec Cartier Mining Company | | | | | | | | | |
| (pellets) | | 1 368 039 | 426 680 | 2 227 325 | | 4 099 937 | | 208 926 | 8 330 907 |
| (concentrates) | | 40 468 | | 379 869 | | 7 123 072 | | 962 735 | 8 506 144 |
| Ontario | | | | | | | | | |
| Adams Mine (pellets) | 1 016 504 | | | | | | | | 1 016 504 |
| Algoma Ore Div. (sinter) | 1 066 167 | | | | | | | | 1 066 167 |
| Sherman Mine (pellets) | 864 790 | | | | | | | | 864 790 |
| Other | | 1 262 | | | | | | | |
| British Columbia | | | | | | | | | |
| Others | | 25 685 | | | | | | | |
| Total | 2 947 461 | 6 450 473 | 2 972 641 | 7 375 776 | | 16 917 875 | 2 370 341 | 1 580 492 | 40 588 112 |

TABLE 9: STOCKS OF USABLE IRON ORE AT MINES AND SHIPPING PORTS IN CANADA, 1987 AND 1988

| | December 31 1987 | December 31 1988 | Change in Stocks |
|---|---|---|---|
| | | (tonnes) | |
| Newfoundland | | | |
| Iron Ore Company of Canada | | | |
| at Sept-Îles | | | |
| (concentrates) | 664 812 | 898 027 | 233 215 |
| (pellets) | 411 155 | 455 858 | 44 703 |
| at Labrador City | | | |
| (concentrates) | 529 887 | 505 464 | (24 423) |
| (pellets) | 95 161 | 53 206 | (41 955) |
| Wabush Mines (pellets) (1) | 268 382 | 375 830 | 107 448 |
| Labrador-Quebec | | | |
| Iron Ore Company of Canada | | | |
| Sept-Îles Division | | | |
| (direct-shipping) (1) | 916 167 | 128 000 | (788 167) |
| Quebec | | | |
| Quebec Cartier Mining Company | | | |
| (pellets) | 269 726 | 778 200 | 508 474 |
| (concentrates) | 552 708 | 334 877 | (217 831) |
| Ontario | | | |
| Adams Mine (pellets) | 5 291 | 6 202 | 911 |
| Algoma Ore Div. (sinter) | 529 | 25 283 | 24 754 |
| Sherman Mine (pellets) | 5 457 | 976 | (4 481) |
| Total | 3 719 275 | 3 561 923 | (157 352) |

(1) Ajustments.

TABLE 10: ANALYSIS OF CANADIAN IRON ORE SHIPMENTS IN 1988

| | Shipments | Nat Fe | Dry Analysis | | | | | | | | Loss by Ignition | Moisture | Size Range |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fe | P | $SiO_2$ | Mn | $Al_2O_3$ | CaO | MgO | S | | | |
| | (tonnes) | | | | | (%) | | | | | | | |
| **Newfoundland** | | | | | | | | | | | | | |
| Iron Ore Company of Canada | | | | | | | | | | | | | |
| (Acid pellets) | 7 899 238 | 64.7 | 65.7 | 0.008 | 4.69 | 0.099 | 0.260 | 0.442 | 0.333 | .. | .. | 1.52 | .. |
| (Fluxed pellets) | 1 953 940 | 61.1 | 62.0 | 0.008 | 4.70 | 0.089 | 0.290 | 4.197 | 1.803 | .. | .. | 1.43 | .. |
| (High silica conc.) | 212 310 | 55.8 | 57.8 | 0.008 | 13.27 | 0.207 | 0.110 | 1.070 | .. | .. | .. | 3.40 | .. |
| (Concentrates) | 3 914 689 | 64.4 | 66.2 | 0.008 | 4.26 | 0.950 | 0.120 | 0.394 | .. | .. | .. | 2.69 | .. |
| Total Carol | 13 980 177 | 64.0 | 65.2 | 0.008 | 4.70 | 0.338 | 0.223 | 1.864 | 0.625 | .. | .. | 1.86 | .. |
| **Wabush Mines (pellets)** | | | | | | | | | | | | | |
| (Acid pellets) | 5 086 902 | 64.3 | 65.6 | | 3.17 | 1.650 | | | | | | 2.26 | .. |
| (Fluxed pellets) | 948 354 | 61.9 | 63.3 | | 3.12 | 0.950 | 0.370 | 2.810 | 1.910 | .. | .. | 2.27 | .. |
| Total Wabush | 6 035 256 | 63.9 | 65.3 | | 3.17 | 1.540 | .. | .. | .. | .. | .. | 2.26 | .. |
| **Quebec-Labrador** | | | | | | | | | | | | | |
| Iron Ore Company Canada | | | | | | | | | | | | | |
| Sept-Iles Division | | | | | | | | | | | | | |
| (Blended) | 788 167 | 55.9 | 59.9 | 0.030 | 9.57 | 0.32 | 0.680 | 0.226 | .. | .. | .. | 6.61 | .. |
| **Quebec** | | | | | | | | | | | | | |
| Quebec Cartier Mining Company | | | | | | | | | | | | | |
| (Concentrates) | 8 506 144 | 64.0 | 66.0 | 0.011 | 4.90 | 0.017 | 0.310 | 0.060 | 0.050 | 0.007 | .. | 3.01 | .. |
| (Acid pellets) | 6 932 562 | 64.4 | 65.3 | 0.011 | 5.40 | 0.020 | 0.450 | 0.350 | 0.250 | 0.003 | .. | 1.46 | .. |
| (Low silica pellets) | 816 069 | 66.2 | 67.5 | 0.011 | 2.20 | 0.020 | 0.450 | 0.350 | 0.250 | 0.003 | .. | 1.37 | .. |
| (Fluxed pellets) | 582 276 | 61.0 | 61.9 | 0.011 | 5.00 | 0.020 | 0.400 | 4.500 | 1.700 | 0.015 | .. | 1.77 | .. |
| Total Quebec Cartier | 16 837 051 | 64.2 | 65.6 | 0.011 | 4.98 | 0.018 | 0.378 | 0.347 | 0.199 | 0.005 | .. | 4.98 | .. |
| **Ontario** | | | | | | | | | | | | | |
| Adams Mine | | | | | | | | | | | | | |
| (Fluxed pellets) | 1 016 504 | 61.0 | 61.4 | .. | 5.35 | .. | 0.290 | 4.930 | 1.810 | .. | .. | 0.72 | 1/4" - 1/2" |
| Algoma Ore Division | | | | | | | | | | | | | |
| Sinter (Fluxed sinter) | 1 066 167 | 48.4 | 48.4 | 0.018 | 7.67 | 2.330 | 1.160 | 12.610 | 7.230 | 0.087 | (0.87) | - | .. |
| Sherman Mine | | | | | | | | | | | | | |
| (Fluxed pellets) | 864 790 | 60.3 | 60.8 | .. | 5.25 | .. | 0.430 | 4.710 | 1.840 | 0.081 | .. | 0.85 | -5/8"+3/8" |

.. Not available; - Nil.

SECTEUR DE LA POLITIQUE MINÉRALE
RAPPORT INTERNE
MRI 89/2

# STATISTIQUES DE L'INDUSTRIE CANADIENNE DU MINERAI DE FER 1988

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Direction des minéraux et des métaux

Énergie, Mines et Ressources Canada
L'hon. Jake Epp, Ministre

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Canada

L'ÉNERGIE DE NOS RESSOURCES
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## PRÉFACE

Le présent rapport fait suite à la série de Statistiques de l'industrie canadienne du minerai de fer qui avait été publiée pour le Bulletin d'information sur les minéraux de 1955 à 1970. Avec le chapitre du minerai de fer de l'Annuaire des minéraux du Canada, les présentes données statistiques passent en revue les aspects de l'industrie canadienne du minerai de fer pour 1988.

Les sociétés qui font partie de l'industrie canadienne du minerai de fer ont fourni au Secteur de la politique minérale les données nécessaires à la compilation des données statistiques. Nous les remercions de leur collaboration et de l'empressement avec lequel elles ont répondu à nos demandes.

## TABLEAUX

### STATISTIQUES DE 1988


| | | Page |
|---|---|---|
| Tableau 1- | Producteurs canadiens de minerai de fer, 1987 et 1988 | 2 |
| Tableau 2- | Minerai de fer brut extrait au Canada, selon la variété et la teneur, 1988 | 3 |
| Tableau 3- | Minerai de fer brut extrait au Canada, selon la méthode d'extraction, 1988 | 4 |
| Tableau 4- | Utilisation du minerai de fer brut extrait au Canada, 1988 | 5 |
| Tableau 5- | Minerai de fer utilisable produit au Canada, selon le type de produit, 1988 | 6 |
| Tableau 6- | Ratio de concentration de déchets/minerai dans les mines de minerai de fer au Canada, 1988 | 7 |
| Tableau 7- | Minerai de fer utilisable expédié par les producteurs canadiens, selon le type de produit, 1988 | 8 |
| Tableau 8- | Minerai de fer utilisable expédié par les producteurs canadiens, selon la destination, 1988 | 9 |
| Tableau 9- | Stocks de minerai de fer utilisable dans les mines et les ports d'expédition au Canada, 1987 et 1988 | 10 |
| Tableau 10- | Analyse des expéditions canadiennes de minerai de fer, 1988 | 11 |


## ILLUSTRATION


Le minerai de fer au Canada, 1988 ..... 1

PRODUCTEURS
(les numéros de référence ci-dessous se rapportent à ceux de la carte)

1. Compagnie minière IOC, division de Carol (mine, concentrateur, usine de bouletage)
2. Wabush Mines (mine, concentrateur)
3. La Compagnie Minière Québec Cartier (mine, concentrateur)
4. Compagnie minière IOC (port)
5. Wabush Mines (usine de bouletage, port)
6. La Compagnie Minière Québec Cartier (usine de bouletage, port)
7. Mine Adams de la Dofasco Inc. (mine, concentrateur, usine de bouletage)
8. Mine Sherman de la Dofasco Inc. (mine, concentrateur, usine de bouletage)
9. Division Algoma Ore de la société Aciers Algoma Limitée (mine, concentrateur, usine de frittage)

TABLEAU 1: CANADA, PRODUCTEURS CANADIENS DE MINERAI DE FER, 1987 ET 1988

| Société et emplacement | Sociétés participantes | Matériaux extrait et (ou) traité 1988 | Produit expédié 1988 | Expéditions 1987 | Expéditions 1988 |
|---|---|---|---|---|---|
| | | (% Fe Naturel) | (% Fe sec/humide) | (000 tonnes naturelles) | |
| Mine Adams; township de Boston, près de Kirkland Lake (Ontario). | Dofasco Inc., gérée par la Cliffs of Canada Limited, filiale en propriété exclusive de The Cleveland-Cliffs Iron Company | Magnétite, mine à ciel ouvert 19 | Boulettes 61,42/60,98 | 1 036 | 1 017 |
| Division Algoma Ore de Aciers Algoma Limitée mine et usine de sinter près de Wawa (Ontario). | Société en propriétée exclusive | Sidérite, mine souterraine 34 | Sinter 48,39/48,39 | 1 118 | 1 066 |
| Compagnie minière IOC mines, concentration et usine de fritage de boulettes au Lac Carol, au Labrador, expéditions directes de minerai de la réserve de Sept-Iles (Québec). | Labrador Mining and Exploration Company Limited, 10,47%; The M.A. Hanna Company (agent gérant), 26,77%; Bethlehem Steel Corp., 32,84%; Dofasco Inc., 6,07%; National Steel Corporation, 18,99%; Wheeling-Pittsburg Steel Corporation, 4,86%. | Hématite, mine ciel ouvert 38,9 | Expédition directe 59,9/55,9 | 1 173 | 788 |
| | | | Concentrés 65,8/64,0 | 2 958 | 4 127 |
| | | | Boulettes 65,0/64,0 | 9 136 | 9 853 |
| La Compagnie Minière Québec Cartier; comprend la mine et le concentrateur au Mont-Wright, près de Fermont (Qué.); usine de frittage de boulettes à Port Cartier (Québec). | USX Corporation | Hématite, mine à ciel ouvert 32,1 | Concentrés 66,02/64,03 | 8 156 | 8 506 |
| | | | Boulettes 65,26/64,30 | 8 198 | 8 331 |
| Mine Sherman; près de Temagami (Ontario). | Dofasco Inc., 90%; Tetapaga Mining Company Limited (filiale en propriété exclusive de The Cleveland-Cliffs Iron Company), 10%. L'exploitation et la gestion de la mine sont assurées par la Cliffs of Canada Limited, également une filiale en propriétée exclusive de The Cleveland-Cliffs Iron Company. | Magnétite, mine à ciel ouvert 25 | Boulettes 60,79/60,31 | 1 090 | 865 |
| Wabush Mines; la mine Scully comprend la mine et le concentrateur de Wabush au Labrador; la division de Pointe-Noire comprend l'usine de frittage de boulettes de Pointe-Noire (Québec). | Stelco Inc., 25,6%; Dofasco Inc., 16,4%; la LTV Corporation, 15,6%; Inland Steel Company., 10,2%; The Interlake Corporation., 10,2%; Wheeling-Pittsburgh Steel Corporation, 10,2%; Finsider of Italy, 6,6% et Pickands Mather & Co. (agent gérant), 5,2%. | Hématite, mine à ciel ouvert 35 | Boulettes 65,33/63,88 | 5 478 | 6 035 |

TABLEAU 2: MINERAI DE FER BRUT EXTRAIT AU CANADA, SELON LA VARIÉTÉ ET LA TENEUR, 1988

| | Hématite | | Magnétite | | Sidérite | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Terre-Neuve | | | | | | |
| Compagnie minière IOC | | | | | | |
| Division de Carol | 35 444 947 | 38,90 | | | | |
| Wabush | 19 638 891 | 37,37 | | | | |
| Québec | | | | | | |
| La Compagnie minière Québec Cartier | | | | | | |
| (Mont Wright) | 41 255 461 | 32,10 | | | | |
| Ontario | | | | | | |
| Mine Adams | | | 3 358 537 | 19,20 | | |
| Division Algoma Ore | | | | | 1 371 721 | 34,15 |
| Mine Sherman | | | 3 386 677 | 24,93 | | |
| Total | 96 339 299 | 35,68 | 6 745 214 | 22,08 | 1 371 721 | 34,15 |

TABLEAU 3: MINERAI DE FER BRUT EXTRAIT AU CANADA, SELON LE MODE D'EXTRACTION, 1988

| | A ciel ouvert | | Souterraine | | Total | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Terre-Neuve | | | | | | |
| Compagnie minière IOC | | | | | | |
| Division de Carol | 35 444 947 | 38,90 | | | 35 444 947 | 38,90 |
| Wabush | 19 638 891 | 37,37 | | | 19 638 891 | 37,37 |
| Québec | | | | | | |
| La Compagnie minière Québec Cartier | | | | | | |
| (Mont Wright) | 43 337 625 | 32,10 | | | 43 337 625 | 32,10 |
| Ontario | | | | | | |
| Mine Adams | 3 358 537 | 19,20 | | | 3 358 537 | 19,20 |
| Division Algoma Ore | | | 1 371 721 | 34,15 | 1 371 721 | 34,15 |
| Mine Sherman | 3 386 677 | 24,93 | | | 3 386 677 | 24,93 |
| Total | 105 166 677 | 34,73 | 1 371 721 | 34,15 | 106 538 398 | 34,73 |

TABLEAU 4: DESTINATION DU MINERAI DE FER BRUT EXTRAIT AU CANADA, 1988

| | Pour expédition directe | | Vers les usines de concentration | | Total | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Terre-Neuve | | | | | | |
| Compagnie minière IOC (Division de Carol) | | | 35 444 947 | 38,90 | 35 444 947 | 38,90 |
| Wabush | | | 19 888 193 | 37,37 | 19 888 193 | 37,37 |
| Québec | | | | | | |
| La Compagnie minière Québec Cartier (Mont Wright) | | | 43 337 625 | 32,10 | 43 337 625 | 32,10 |
| Ontario | | | | | | |
| Mine Adams | | | 3 402 702 | 19,20 | 3 402 702 | 19,20 |
| Division Algoma Ore | | | 1 351 707 | 34,15 | 1 351 707 | 34,15 |
| Mine Sherman | | | 3 353 152 | 24,93 | 3 353 152 | 24,93 |
| Total | | | 106 778 326 | 34,73 | 106 778 326 | 34,73 |

TABLEAU 5: MINERAI DE FER UTILISABLE PRODUIT AU CANADA, SELON LE TYPE DE PRODUIT, 1988

| | Expéditions directe | | Concentrés | | Agglomérés | | Total | |
|---|---|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| **Terre-Neuve** | | | | | | | | |
| Compagnie minière IOC | | | | | | | | |
| (Division de Carol) | | | 4 715 158 | 64,40 | 9 828 362 | 64,01 | 14 543 520 | 64,14 |
| Wabush | | | | | 6 035 256 | 63,88 | 6 035 256 | 63,88 |
| **Québec** | | | | | | | | |
| La Compagnie minière Québec | | | | | | | | |
| Cartier (Mont Wright) | | | 8 336 147 | 66,20 | 8 545 322 | 64,40 | 16 881 469 | 65,29 |
| **Ontario** | | | | | | | | |
| Mine Adams | | | | | 1 017 373 | 60,98 | 1 017 373 | 60,98 |
| Division Algoma Ore (1) | | | | | 1 066 167 | 48,79 | 1 066 167 | 48,79 |
| Mine Sherman | | | | | 864 790 | 60,31 | 864 790 | 60,31 |
| **Total** | | | 13 051 305 | 65,55 | 27 357 270 | 63,28 | 40 408 575 | 64,01 |

(1) Comprend 133 510 tonnes de déchets d'oxydes de minéraux d'acieries et 110 364 tonnes de chaux.

TABLEAU 6: RAPPORT DE LA CONCENTRATION DÉCHETS/MINERAI DANS LES MINES DE MINERAI DE FER AU CANADA, 1988

| | Déchets, mines à ciel ouvert | Déchets, mines souterraines | Minerai de fer extrait | Charge d'alimentation de l'usine | Minerai de fer utilisable produit | Rapport déchets/ minerai | Rapport déchets/minerai utilisable | Rapport de concentration |
|---|---|---|---|---|---|---|---|---|
| | (tonnes) | | | | | | | |
| **Terre-Neuve** | | | | | | | | |
| Compagnie minière IOC (Division de Carol) (1) | 9 464 000 | | 35 444 947 | 35 444 947 | 15 067 313 | 0,27 | 0,63 | 2,35 |
| Wabush | 5 107 363 | | 16 325 385 | 22 189 583 | 6 080 994 | 0,31 | 0,84 | 3,65 |
| **Québec** | | | | | | | | |
| La Compagnie minière Québec Cartier (Mount Wright) | 20 003 314 | | 41 255 461 | 43 337 625 | 16 689 218 | 0,48 | 1,20 | 2,60 |
| **Ontario** | | | | | | | | |
| Mine Adams | 1 840 786 | | 3 358 537 | 3 402 702 | 1 179 493 | 0,55 | 1,56 | 2,88 |
| Division Algoma Ore (2) | | 4 608 | 1 467 393 | 1 351 707 | 1 343 600 | 0,00 | 0,00 | 1,01 |
| Mine Sherman | 2 046 742 | | 3 794 198 | 3 353 152 | 1 030 287 | 0,54 | 1,99 | 3,25 |

(1) On a utilisé le facteur suivant: 2,6 tonnes métriques égalent un mètre cube.

(2) Le minerai de fer utilisable produit et les ratios comprennent 133 510 tonnes de déchets d'oxydes de minerai d'aciéries et 110 364 tonnes de chaux.

TABLEAU 7: MINERAI DE FER UTILISABLE EXPÉDIÉ PAR LES PRODUCTEURS CANADIENS, SELON LE TYPE DE PRODUIT, 1988

| | Expéditions directe | | Concentrés | | Agglomérés | | Total | |
|---|---|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Terre-Neuve | | | | | | | | |
| Compagnie minière IOC (Division de Carol) | | | 4 126 999 | 64,0 | 9 853 178 | 64,0 | 13 980 177 | 64,0 |
| Wabush | | | | | 6 035 256 | 63,9 | 6 035 256 | 63,9 |
| Labrador-Québec | | | | | | | | |
| Compagnie minière IOC (Division de Sept-Îles) | 788 167 | 55,9 | | | | | 788 167 | 55,9 |
| Québec | | | | | | | | |
| La Compagnie minière Québec Cartier (Mont Wright) | | | 8 506 144 | 64,0 | 8 330 907 | 64,3 | 16 837 051 | 64,1 |
| Ontario | | | | | | | | |
| Mine Adams | | | | | 1 016 504 | 61,0 | 1 016 504 | 61,0 |
| Division Algoma Ore | | | | | 1 066 167 | 48,4 | 1 066 167 | 48,4 |
| Mine Sherman | | | | | 864 790 | 60,3 | 864 790 | 60,3 |
| Autres | | | 1 262 | .. | | | | |
| Colombie-Britanique | | | | | | | | |
| Autres | | | 25 685 | .. | | | | |
| Total(1) | 788 167 | 55,9 | 12 660 090 | 64,0 | 27 166 802 | 63,2 | 40 588 112 | 63,3 |

(1) La teneur moyenne en Fe naturel est calculée à partir des statistiques fournies.

.. :non disponible

TABLEAU 8: MINERAI DE FER UTILISABLE EXPÉDIÉ PAR LES PRODUCTEURS CANADIENS, SELON LA DESTINATION, 1988

| | Canada | | États-Unis | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Chemin de fer | Autre | Grands Lacs | Autres ports | Chemin de fer | CE | Japon | Autres pays | Total |
| | | | | | (tonnes) | | | | |
| **Terre-Neuve** | | | | | | | | | |
| Compagnie Minière IOC | | | | | | | | | |
| Div. de Carol (conc.) | | | 87 061 | 6 698 | | 1 317 078 | 2 370 341 | 345 821 | 4 126 999 |
| Div. de Carol (boulettes) | | 1 719 281 | 654 162 | 4 442 862 | | 2 973 863 | | 63 010 | 9 853 178 |
| Wabush Mines (boulettes) | | 3 137 610 | 1 682 775 | 319 022 | | 895 849 | | | 6 035 256 |
| **Labrador-Québec** | | | | | | | | | |
| Compagnie Minière IOC | | | | | | | | | |
| Division Sept-Îles | | | | | | | | | |
| (expéditions directes) | | 158 128 | 121 963 | | | 508 076 | | | 788 167 |
| **Québec** | | | | | | | | | |
| La Compagnie Minière Québec | | | | | | | | | |
| Cartier (boulettes) | | 1 368 039 | 426 680 | 2 227 325 | | 4 099 937 | | 208 926 | 8 330 907 |
| (concentrés) | | 40 468 | | 379 869 | | 7 123 072 | | 962 735 | 8 506 144 |
| **Ontario** | | | | | | | | | |
| Mine Adams (boulettes) | 1 016 504 | | | | | | | | 1 016 504 |
| Div. Algoma Ore (sinter) | 1 066 167 | | | | | | | | 1 066 167 |
| Mine Sherman (boulettes) | 864 790 | | | | | | | | 864 790 |
| Autre | | 1 262 | | | | | | | |
| **Colombie-Britannique** | | | | | | | | | |
| Autres | | 25 685 | | | | | | | |
| **Total** | 2 947 461 | 6 450 473 | 2 972 641 | 7 375 776 | | 16 917 875 | 2 370 341 | 1 580 492 | 40 588 112 |

TABLEAU 9: STOCKS DE MINERAI DE FER UTILISABLE DANS LES MINES ET LES PORTS D'EXPÉDITIONS AU CANADA, 1987 ET 1988

| | 31 décembre 1987 | 31 décembre 1988 | Variation des stocks |
|---|---|---|---|
| | | (tonnes) | |
| Terre-Neuve | | | |
| Compagnie Minière IOC | | | |
| à Sept-Iles | | | |
| (concentrés) | 664 812 | 898 027 | 233 215 |
| (boulettes) | 411 155 | 455 858 | 44 703 |
| à Labrador City | | | |
| (concentrés) | 529 887 | 505 464 | (24 423) |
| (boulettes) | 95 161 | 53 206 | (41 955) |
| Wabush Mines (boulettes) (1) | 268 382 | 375 830 | 107 448 |
| Labrador-Québec | | | |
| Compagnie Minière IOC | | | |
| Division Sept-Iles | | | |
| (expéditions directes) (1) | 916 167 | 128 000 | (788 167) |
| Québec | | | |
| La Compagnie Minière Québec | | | |
| Cartier (boulettes) | 269 726 | 778 200 | 508 474 |
| (concentrés) | 552 708 | 334 877 | (217 831) |
| Ontario | | | |
| Mine Adams (boulettes) | 5 291 | 6 202 | 911 |
| Div. Algoma Ore (sinter) | 529 | 25 283 | 24 754 |
| Mine Sherman (boulettes) | 5 457 | 976 | (4 481) |
| Total | 3 719 275 | 3 561 923 | (157 352) |

(1) Ajustements

TABLEAU 10: ANALYSE DES EXPÉDITIONS CANADIENNES DE MINERAI DE FER, 1988

| | Expéditions | Fe nat. | Analyse-expédié tel que | | | | | | | | Perte de combustion | Humidité | Échelle granulométrique |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fe | P | $SiO_2$ | Mn | $Al_2O_3$ | CaO | MgO | S | | | |
| | (tonnes) | | | | | (%) | | | | | | | |
| **Terre-Neuve** | | | | | | | | | | | | | |
| Compagnie Minière IOC | | | | | | | | | | | | | |
| (Boulettes acides) | 7 899 238 | 64,7 | 65,7 | 0,008 | 4,69 | 0,099 | 0,260 | 0,442 | 0,333 | .. | .. | 1,52 | .. |
| (Boulettes fondantes) | 1 953 940 | 61,1 | 62,0 | 0,008 | 4,70 | 0,089 | 0,290 | 4,197 | 1,803 | .. | .. | 1,43 | .. |
| (Boul. haute silice conc.) | 212 310 | 55,8 | 57,8 | 0,008 | 13,27 | 0,207 | 0,110 | 1,070 | .. | .. | .. | 3,40 | .. |
| (Concentrés) | 3 914 689 | 64,4 | 66,2 | 0,008 | 4,26 | 0,950 | 0,120 | 0,394 | .. | .. | .. | 2,69 | .. |
| Total, Carol | 13 980 177 | 64,0 | 65,2 | 0,008 | 4,70 | 0,338 | 0,223 | 1,864 | 0,625 | .. | .. | 1,86 | .. |
| Wabush Mines (Boulettes) | | | | | | | | | | | | | |
| (Boulettes acides) | 5 086 902 | 64,3 | 65,6 | .. | 3,17 | 1,650 | .. | .. | .. | .. | .. | 2,26 | .. |
| (Boulettes fondantes) | 948 354 | 61,9 | 63,3 | .. | 3,12 | 0,950 | 0,370 | 2,810 | 1,910 | | | 2,27 | .. |
| Total, Wabush | 6 035 256 | 63,9 | 65,3 | .. | 3,17 | 1,540 | .. | .. | .. | .. | .. | 2,26 | .. |
| **Québec-Labrador** | | | | | | | | | | | | | |
| Compagnie Minière IOC | | | | | | | | | | | | | |
| Division de Sept-Îles | | | | | | | | | | | | | |
| (expéditions directes) | 788 167 | 55,9 | 59,9 | 0,030 | 9,57 | 0,321 | 0,680 | 0,226 | .. | .. | .. | 6,61 | .. |
| **Québec** | | | | | | | | | | | | | |
| La Compagnie Minière Québec Cartier (Concentrés) | 8 506 144 | 64,0 | 66,0 | 0,011 | 4,90 | 0,017 | 0,310 | 0,060 | 0,050 | 0,007 | .. | 3,01 | .. |
| (Boulettes acides) | 6 932 562 | 64,4 | 65,3 | 0,011 | 5,40 | 0,020 | 0,450 | 0,350 | 0,250 | 0,003 | .. | 1,46 | .. |
| (Boulettes basse silice) | 816 069 | 66,2 | 67,5 | 0,011 | 2,20 | 0,020 | 0,450 | 0,350 | 0,250 | 0,003 | .. | 1,37 | .. |
| (Boulettes autofondantes) | 582 276 | 61,0 | 61,9 | 0,011 | 5,00 | 0,020 | 0,400 | 4,500 | 1,700 | 0,015 | .. | 1,77 | .. |
| Total Québec Cartier | 16 837 051 | 64,2 | 65,6 | 0,011 | 4,98 | 0,018 | 0,378 | 0,347 | 0,199 | 0,005 | .. | 4,98 | .. |
| **Ontario** | | | | | | | | | | | | | |
| Mines Adams | | | | | | | | | | | | | |
| (Boulettes fondantes) | 1 016 504 | 61,0 | 61,4 | .. | 5,35 | .. | 0,290 | 4,930 | 1,810 | .. | .. | 0,72 | 1/4" - 1/2" |
| Division Algoma Ore | | | | | | | | | | | | | |
| Sinter (Superfondant) | 1 066 167 | 48,4 | 48,4 | 0,018 | 7,67 | 2,330 | 1,160 | 12,610 | 7,230 | 0,087 | (0,87) | - | .. |
| Mine Sherman | | | | | | | | | | | | | |
| (Boulettes fondantes) | 864 790 | 60,3 | 60,8 | .. | 5,25 | .. | 0,430 | 4,710 | 1,840 | 0,081 | .. | 0,85 | -5/8"+3/8" |

.. :non disponible; -:néant